

Appl. No. 09/325,189

Response to Office Action mailed July 13, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Claim 1. (currently amended)** A method of analyzing a target nucleic acid by applying a nucleic acid amplification reaction to a test solution containing the target nucleic acid, wherein an amplified product is labeled with a marker molecule, said method comprises:

(a) performing a nucleic acid amplification reaction of the target nucleic acid in a test solution containing a forward primer and a reverse primer, a substrate comprising nucleotides, a nucleic acid polymerase and a target nucleic acid, wherein the number of one of the forward primer and the reverse primer is lower than that of the other one of the forward primer and the reverse primer, and the primer present in a lower number is labeled with a marker molecule capable of generating a detectable signal to form a labeled primer, the nucleic acid amplification reaction being performed until the primer present in a lower number is consumed;

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(b) measuring a signal from the marker molecule in the test solution after initiation of the nucleic acid amplification reaction;

(c) evaluating a fluctuation motion of the labeled primer and the amplified nucleic acid which is labeled with the marker molecule, in the test solution on the basis of the signal detected; and

(d) determining a number of cycles of the nucleic acid amplification reaction performed until the labeled primer has been completely consumed, and a yield of the amplified nucleic acid which is labeled with the marker molecule, based on an evaluation result of the step (c); and

~~[(d)]~~ (e) quantifying an initial amount of the target nucleic acid on the basis of ~~evaluation results~~ the number of cycles of the nucleic acid amplification reaction and the yield of the amplified nucleic acid which is labeled with the marker molecule.

Claim 2. (previously presented) A method according to claim 1, wherein the measurement step includes a step of measuring an

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amount of the marker molecule present in a predetermined micro detection field, said marker molecule being contained in the labeled primer attached to the target nucleic acid.

**Claim 3. (previously presented)** A method according to claim 2, wherein, in the measurement step, the measurement is performed in a fluid.

**Claim 4. (currently amended)** A method according to claim 3, wherein the evaluation step comprises a measurement which is ~~affected~~ effected by fluorescence correlation spectroscopy.

**Claim 5. (canceled)**

**Claim 6. (canceled)**

**Claim 7. (currently amended)** A method according to any one of claims 1 to ~~[[5]]~~ 4, wherein the quantifying of the target nucleic acid includes determining the presence and absence of the marker molecule of the labeled primer attached to the target

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nucleic acid and incorporated into products of the nucleic acid amplification reaction on the basis of the evaluation results.

**Claim 8. (currently amended)** The method according to any one of claims 1 to [[5]] 4, wherein the quantifying of the target nucleic acid includes determining the number of the labeled primer attached to the target nucleic acid and incorporated into products of the nucleic acid amplification reaction on the basis of the evaluation results.

**Claims 9 to 38. (canceled)**

**Claim 39. (currently amended)** A method according to any one of claims 1 to [[5]] 4, wherein the number of labeled primer molecules is known.

**Claim 40. (canceled)**

**Claim 41. (canceled)**

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**Claim 42. (previously presented)** A method according to claim 1, wherein the mixing ratio of the forward primer and the reverse primer is in a range of 2:1 to 20:1.

**Claim 43. (previously presented)** A method according to claim 42, wherein the mixing ratio of the forward primer and the reverse primer is in a range of 800nM : 400nM to 800nM : 40nM.

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